to have originated at or about the fireplaces. Nothing can exceed the carelessness with which these essential parts of domestic buildings are constructed. Builders are doubtless compelled to trust greatly to their workmen; nevertheless, if it were made a matter of some importance with masters to see that all preventive measures were carried out in such cases, much good would undoubtedly result from the practice. We will now very briefly point out the most defective arrangements too often adopted or *allowed* to be carried into effect, and what may be considered as simple and effective preventive measures, remedying such.

And, first, as to the placing of the grate. Within these few years, register grates and others of a similar construction, have been much used. Perhaps the reason (independent of their smoke-curative powers), which has caused them to be so largely adopted, is the facility for fitting up which they present. In the old-fashioned grate, the whole nearly of the ironwork rested upon brickwork; thus necessitating the employment of a workman to set it: on the contrary, with a register grate, all that is to be done is to measure the orifice of the fireplace, procure a grate, and the servant maid, for that matter, may put it in its place. But when a grate is inserted in its place, a large empty space or vacuity is left invariably behind it. The soot falls into this, and continues to increase in quantity till it reach the part of the grate that is hottest (often red hot): ignition takes place, the fire may smoulder on for days, heating and igniting the combustibles that may be near the fireplace, till at last it gains such a degree of intensity that it acquires the mastery and bursts into flame, and all is mystery and conjecture as to the cause of the alarming fire. It may be said, that the back part of grates are filled in with firebrick, so that the heat cannot be very great. In some instances this is the case, but it is the exception, not the rule. Moreover, were it so, the degree of heat even then arrived at would be dangerous. It is now matter of notoriety, that soot and easily combustible materials do not require an intense heat to ignite them. They have more or less a tendency to spontaneous combustion—this is increased by the temperature being raised. Much knowledge has yet to be acquired relative to the chemical affinities of various bodies, with reference to their liability to combustion. From much experience in this matter, we are inclined to think that a less degree of heat than is generally supposed (certainly far below what is called "red heat") is required to set soot and such combustibles on fire. Thus charcoal, for instance, ignites with facility at a temperature of 280°,—a degree of heat not a great deal above that of boiling water. The spaces behind grates are often filled up with combustible rubbish,—shavings, cinders, ashes, or in fact any vile conglomeration of materials that can be obtained most readily. We quote an instance which might be amusing, were it not melancholy, as indicative of the gross carelessness of parties on such occasions. We were called to a raging fire at the back of a register grate on one occasion, when, upon removing the grate, it was discovered that the whole vacuity behind was filled up with several bushels of simple unadulterated coals. Upon inquiry it turned out that the bricklayer, having been directed to the dust-bin for rubbish, and finding it empty, had directed his Pat to basket away from the coal cellar! Parties may say that such culpable negligence is occasioned by the workmen. Very true! But so long as the present arrangements are so universally adopted so long will the reputation of the master builder and the safety of the building be at the mercy of the careless workman. We hold, however, that matters should be so arranged that the workmen will not have it in their power to endanger the safety of the building on which they may be employed. "If a thing is worth doing at all, it is worth doing well;" and we conceive that it is matter of importance to plan the construction of fireplaces with as much regard to safety as any other part of the structure. The many modes of obviating the danger from the source we have pointed out will at once occur to the reader. If register grates are to be used, we see no occasion to have the space of the fireplace so large. No advantage is to be gained from having a large vacuity behind the grate; on the contrary, positively much danger. What we would consider to be a business-like mode of procedure in the setting of modern grates would be the following:—Let the fireplace be made of dimensions to suit the size of grate proportioned to the dimensions of the room in which it is to be placed. Fill up the back part with solid (not hollow) brickwork, the angles of which are to be an exact copy of those of the back of the grate. At the proper height build in all the empty space of chimney flue, leaving an aperture, which should be right above that placed at the top of the grate; so that the only communication to the flue above will be through these apertures. The size of recess in which the grate is to stand, should manifestly be equal to the depth of the grate, calculating from the front face plate to the back; so that when inserted in its place, the back and angular sides will be in close contact with brickwork behind. After thus fixed, let all the interstices communicating with any portion of the grate and the chimney-flue be carefully filled up with fire-proof cement, so that falling soot must of necessity go direct into the fireplace. We feel convinced that we have only to point out these suggestions to enable the reader to see the value of the advantages to be derived from them.

Another fruitful source of mischief is the defective laying of the hearthstone. Wide interstices are often left communicating with the spaces below; and shavings, sawdust, &c., are often put beneath: these often ignite, from the heat of the stone above, or by particles of burning soot or other material falling through the interstices. A well-laid bed of mortar should be made for the stone to lie on, or a plate of iron should be placed beneath it, the interstices being carefully closed up with fireproof cement; the part immediately below the grate being particularly attended to. Grids for retaining the ashes and red-hot cinders from the fire are useful, as tending to keep the hearthstone cool.

Wood should never be used in the construction of fireplaces. Beams of wood are often placed in close contiguity with fireplaces, and are the cause of very many destructive fires. Iron, in all such cases, should be substituted for wood: the small additional cost would be amply repaid by the increased security from fire. In building about the fireplaces and flues, the whole should be of solid brickwork: there is a practice which obtains too often amongst careless workmen of making in brickwork fair external joints, while all behind is left hollow: this should be carefully looked to and prevented. "The hollows get filled with soot; and, when a fire takes place in an adjacent flue, the sooty chinks form a train which sets the building on fire." In setting fireplaces, the great desideratum is to have solid brick setting,—in no case having hollow places. Wooden beams, rafters, girders, &c., should never be allowed to pass near the flues, much less be allowed to protrude therein. The inside of the flues should be made as smooth as possible, and the interstices between the niches carefully filled up with fire-clay or cement. "Firing from alterations in flues," says Mr. Beaumont, "and additional flues erected in old buildings, are very common. The workmen must be, of necessity, somewhat in the dark as to the precise layings of adjacent timber; but the indifference with which they disregard the contiguity of timber which they see, or know of, is frequently remarkable. Additional flues, to communicate with the kitchen flue, are continually required for hotplates, boilers, and ovens, and a slant of 6 feet or 8 feet in length, generally forms the connection with the kitchen flue; but to make the projection as little unsightly as may be, as well as to get a support for the work, it is common to cut a chase in the wall: the bond timber, in doing this, is frequently laid bare; but many workmen are so culpable as to make this exposed timber one side of their flue, or if they daub over it a bit of tile or slate, it is deemed an ample sacrifice to prudence. But fires in these furnaces, and in the short flues from them, are very powerful: they are sure to fire adjacent woodwork, *unless a sufficiency of brickwork intervene.*"

The reader will perceive from the tenor of our remarks that the points to be aimed at in the construction of fireplaces and flues are, the complete isolation of the parts used for containing the fuel, and leading away smoke, flame, &c., from the surrounding woodwork; the using of iron in place of wood, when required; the doing away with hollow spaces; and the placing of the aperture of the grate with that of the flue in such a way as to compel all descending soot to fall into the grate alone. If these points are attended to, no danger need be apprehended from this too often fruitful source of destruction.

ROYAL ACADEMY.*

In the middle room, Messrs. Egg, Elmore, Frith, and Ward, who may be looked upon in connection, from their having progressed simultaneously, as well as from their class of subjects, hold deservedly prominent positions.

(292) "Peter the Great sees Catherine, his future Empress, for the first time," A. Egg, A. The composition of this picture is very original, and strikes one by its un-English appearance. The beautiful painting and careless *pose* of the two martial figures to whom Catherine tends her *viandière* ware, and the voluptuous aristocratic air of the heroine, are inimitable. Peter, admirable in technical attributes, is somewhat too juvenescent, but looks a hero.

The (312) "Griselda" of A. Elmore, A., is not equal to his "Religious Controversy" of last year; but the superlative charms of the patient Griselde, the careful execution and nice colour, constitute it not likely to detract from his good name.

(332) "Sancho tells a Tale to the Duke and Duchess, to prove that Don Quixote is at the Bottom of the Table," W. P. Frith, R.A. Mr. Leslie has so completely appropriated these immortal characters, that anything differing from his conception appears unlike the author's description. The Don here is a caricature, and Sancho wants individuality: the Duke is a genteel, quiet, unobtrusive personage, and the Duchess has not the appearance of being able to relish a joke,—formal and cold, cold as her exquisitely painted and silvery drapery. The ladies in waiting are the most successful of all the *dramatis personæ*. His other contribution is immeasurably superior to this: (543), "In the west room, the 1st scene, 3rd act, of Goldsmith's "Good-natured Man,"—"Mr. Honeywood introduces the bailiffs to Miss Rickland as his friends,"—wherein the precise and elegant execution signalizing the artist, is combined with more power and force of pronunciation than usual.

Mr. E. M. Ward, whose subjects, so judiciously selected as they are, have ever a prestige with them, has brought his mind to bear upon the historical incident (350), "James II., in his palace of Whitehall, receiving the news of the landing of the Prince of Orange, in 1668," and has produced a picture of national interest and importance. The various faithful portrayals of the chief lions of the time, and the adherence to costume and depiction of things as they were, are secondary to the artistic embodiment of the story. The imbecility of James, and, indeed, the general expressions of the courtiers, are admirable. We are glad to learn that this work has been purchased for the Art-Union of London.

(233) "The Marquis having chosen patient Griselda for his wife, causes the Court ladies to dress her in her father's cottage," R. Redgrave, A. Careful, well-drawn, and full of feeling. This also has been purchased for the Art-Union.

The "Andromeda" (304) of W. E. Frost, A., undeniably excellent in many respects, is manipulated to weakness, and amenable to the comments already applied to him in his chief work.

(342) "Scene from the 'Tempest'," F. Stone. A pretty Miranda and as pretty a Ferdinand. Prospero "woody;" the background, by no means so. (135, east room), "The Gardener's Daughter," leaves a much more favourable impression.

(376) "Francisco Novello di Carrara, and the Lady Taddea, escape from the emissaries of Galeasso Visconti, who are in pursuit of them," and (503), "A Dream of Venice," to which a quotation from "Sansovino" be ap-

* Continued from p. 236, *ante*.